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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,162	07/09/2001	William R. Rehman	11694-04106	8708

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EXAMINER

KOCH, GEORGE R

ART UNIT PAPER NUMBER

1734

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/901,162	Applicant(s) REHMAN ET AL.	
	Examiner George R. Koch III	Art Unit 1734	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-46 and 48-55 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 41-46 and 48-55 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2, 8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. This application repeats a substantial portion of prior Application No. 09/724,363, filed November 28th, 2000. The first line of the specification of this application as originally filed indicates that this application is a continuation-in-part on Application No. 09/724,363. A preliminary amendment filed on 2-28-2002 further added that this application is a divisional of Application 09/724,393, but did not delete the statement indicating that the application is a continuation-in-part. An application can either be a continuation-in-part or a divisional, but not both. Since the application appears to have material not in the parent, it is being treated as a continuation-in-part. The statement indicating that this application is a divisional should be deleted.

Claim Objections

2. Claim 45 is objected to because of the following informalities: The word "ore" in line 1 of claim 45 should be corrected to the word "or". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 44 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 44 recites the limitation "said gun" in line 3. There is insufficient antecedent basis for this limitation in the claim. It appears the error is a result of not inserting "gun" between the words *coating* and *having* in line 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 41- 45 and 48-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Myers (US 4,071,192).

Myers discloses a tribo-electric powder gun having a component which includes a tribo-electric charging surface (barrel 23 and wall 24, see column 3, lines 38-45, which discloses that the wall 24 performs the frictional charging), the component being capable of assembly into the gun in at least two different positional orientations (via adjustable clearance 30, adjustable via screw connection 26 - see column 3, lines 6-19).

As to claim 42, the component (item 23 and 24) is rotated into end cap 20. Thus, Myers discloses at least a first position and a second position.

As to claim 43, the rotating of the tribo-charging component into the end cap provides the capability for the tribo-charging component to have two or more reversible positions.

As to claim 44, Myers discloses a tribo-electric powder gun having a component which includes a tribo-electric charging surface (barrel 23 and wall 24, see column 3, lines 38-45, which discloses that the wall 24 performs the frictional charging), the component (item 23 and 24) is rotated into end cap 20, i.e. the holder, which forms a two piece assembly, the two piece assembly being assembled into a gun.

As to claim 45, Myers discloses that the holder can optionally include one or more air jet passages (item 22 - see column 3, line 57 to column 4, line 10).

As to claim 48, Myers discloses a tribo-electric powder gun having a component which includes a tribo-electric charging surface (barrel 23 and wall 24, see column 3, lines 38-45, which discloses that the wall 24 performs the frictional charging), that the holder can optionally include one or more air jet passages (item 22 - see column 3, line 57 to column 4, line 10). Based on Figures 2 and 3, the air jets would be along the flow path, and would impinge on the tribo-charging surface.

As to claim 49, Myers discloses a tribo-charging surface which includes a negative tribo-charging material such as acetal plastic (see column 4, lines 37-38).

As to claim 50, Myers discloses an acetal plastic, i.e., an acetal polymer (see column 4, lines 37-38).

As to claim 51, Myers discloses that the tribo-charging component (item 23 and 24) is rotated into end cap 20, i.e. the holder, which forms a two piece assembly, the two piece assembly being assembled into a gun. This tribo-charging element is considered capable of being removed from the spray gun.

As to claim 52, the tribo-charging component (item 23 and 24) is rotated into end cap 20. Thus, Myers discloses at least a first position and a second position.

As to claim 53, the rotating of the tribo-charging component into the end cap provides the capability for the tribo-charging component to have two or more reversible positions.

As to claim 54, the component (item 23 and 24) is rotated into end cap 20. Thus, Myers discloses at least a first rotational orientation and a second rotational orientation.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers as applied to claim 41-45 and 48-54 above, and further in view of Peck (US Patent 4,090,666).

Myers does not disclose that the holder includes one or more electric ground elements.

Peck discloses that grounding means such as an electrically conductive wire grounds the gun to complete the tribo-electric circuit and limits the potential of the gun on long term usage. Peck is silent as to the location, but one in the art would appreciate that this wire can be attached to either the holder or the tribo-charging component. Peck discloses that not including this grounding element decreases the gun performance (see column 4, lines 6-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a grounding element as disclosed in Peck in order to ensure proper gun performance as disclosed in Peck.

11. Claim 49 and 50 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Myers as applied to claim 48 above, and further in view of Lader (US 5,622,313) and any of (1) (a) Handbook of Plastic Compounds, Elastomers and Resins with (b) Powder Coating : The complete finisher's handbook 1st Edition (2) Conductive Polymers and Plastics or (3) Mammino (US 5,683,844) or (4) Peck (4,090,666) and the

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Delrin AF fact sheet from Insterstate Plastics (published in 1999) or (5) Walberg (US 3,896,994)..

Myers does not disclose all of the claimed materials can form the tribocharging surface.

As to claim 49 and 50 in general, Lader discloses an apparatus for spraying powder coating material having a powder flow path (see Figure 1, for example), wherein the powder flow path has a charging surface for triboelectrically charging powder which comes in contact with the charging surface.

Lader does not disclose that any of the claimed materials can form the tribocharging surface. However, Lader does disclose that materials used as powders can be reversed to be used as charging surfaces, and vice versa (see column 1, lines 56-64).

As to claim 49 and 40, Handbook of Plastic Compounds, Elastomers and Resins discloses that it is known to use aminoplastic resins as a coating material for automobile primer and enamel applications (for example, any of the Uformite ® entries on page 65). Automobile painting is conventionally performed by an electrostatic coating process (for example, see page 1 of Powder Coating, which discloses that electrostatic powder spray is the most common form of spraying in industrial applications). Under the reversibility principle disclosed in Lader, these aminoplastic resins can also be used as charging surfaces. Such a charging surface would allow for the application of different powders and would improve coating versatility in an industrial environment. Therefore,

it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized an aminoplastic as the charging surface.

As to claim 49 and 50, Conductive Polymers and Plastics (in pages 181-187) discloses the use negative tribocharging materials such as polyamide resin blends such as polyphenylene ether and polyamide as a coating material for electrostatic coating. Under the reversibility principle disclosed in Lader, these polyamide resin blends can also be used as charging surfaces. Such a charging surface would allow for the application of different powders and would improve coating versatility in an industrial environment. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a polyamide resin blend as the charging surface.

As to claim 49 and 50, Mammino discloses the use of negative tribocharging materials such as fiber reinforced polyamide such as fibrillated PTFE (see columns 5 through 7 and polyamide as a coating material for electrostatic coating applications. Under the reversibility principle disclosed in Lader, these fiber reinforced polyamides can also be used as charging surfaces. Such a charging surface would allow for the application of different powders and would improve coating versatility in an industrial environment. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a fiber reinforced polyamides as the charging surface.

As to claim 49 and 50, Peck discloses that it is known to use negative tribocharging materials such as delrin and Teflon in the fluid flow due to their excellent

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transfer efficiencies. Further, the specifications for delrin AF, published in 1999, disclose that delrin AF has similar dielectric properties to ordinary delrin. Ordinary delrin has a dielectric constant of 3.7 and a dielectric strength of 380 Volts/mil, and delrin AF has a dielectric constant of 3.1 and a dielectric strength of 400 Volts/mil. Since triboelectric charging effectiveness is a factor of dielectric properties, one in the art would appreciate that delrin AF is an acceptable substitute of the delrin surface cited in Peck. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized an acetal polymer combined with polytetrafluoroethylene fibers such as Delrin AF as part of the charging surface in Lader since Peck discloses using delrin and delrin AF is equivalent to delrin, and such a substitution could lead to improved transfer properties.

As to claim 49 and 50, Walberg discloses use that it is known negative tribocharging materials in such components such as the internal mix cap, a part of the fluid flow, which is manufactured from Celcon, cited by applicant as an acetal copolymer. Such a charging surface would allow for the application of different powders and would improve coating versatility in an industrial environment. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized an acetal copolymer as part of the charging surface.

Furthermore, official notice is taken that is considered well known and conventional to mix the above materials to form a tribocharging surface, in order to modulate the charging of the powder.

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12. The references not included with this action were submitted in parent case (US Application 09/724,363)

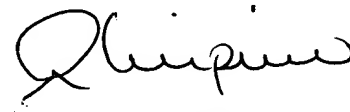
Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (703) 305-3435 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-800-877-8339 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



George R. Koch III
October 18th, 2003



RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
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